

What is claimed is:

1. A nonaqueous liquid electrolyte comprising:

a nonaqueous solvent,

5 an electrolyte dissolved in the nonaqueous solvent,

and

a macromolecular material added to the nonaqueous solvent, wherein the nonaqueous liquid electrolyte is a fluid having a viscosity at 20°C of 7 cP to 30,000 cP.

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2. A nonaqueous liquid electrolyte according to Claim

1, wherein the apparent viscosity of the nonaqueous

liquid electrolyte at 20°C is 50 cP to 10,000 cP at a shear rate of 20 S⁻¹.

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3. A nonaqueous liquid electrolyte comprising:

a nonaqueous solvent,

an electrolyte dissolved in the nonaqueous solvent,

and

20 a macromolecular material added to the nonaqueous solvent, wherein the nonaqueous liquid electrolyte at 20°C is a fluid which exhibits non-Newtonian properties.

4. A nonaqueous liquid electrolyte according to Claim

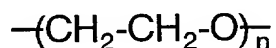
25 3, wherein the nonaqueous liquid electrolyte is a fluid

whose apparent viscosity at 20°C decreases with the increase of the shear rate.

5. A nonaqueous liquid electrolyte according to Claim
5 4, wherein the apparent viscosity of the nonaqueous liquid electrolyte at 20°C is 7 cP to 10,000 cP at a shear rate of 20 S⁻¹.

6. A nonaqueous liquid electrolyte comprising:
10 a nonaqueous solvent,
an electrolyte dissolved in the nonaqueous solvent,
and
a macromolecular material added to the nonaqueous solvent, wherein the ratio of ion conductivity σ (10⁻³
15 S/cm) to viscosity η (cP), $p (\sigma/\eta)$, in the nonaqueous liquid electrolyte at 20°C is <0.1.

7. A nonaqueous liquid electrolyte comprising:
a nonaqueous solvent containing γ -butyrolactone,
20 an electrolyte dissolved in the nonaqueous solvent,
and
a macromolecular material comprising the structure represented by the formula:



25 wherein $n \geq 1$, which is added to the nonaqueous

solvent,

wherein the content of the macromolecular material is 0.01% or more but less than 10% by weight.

5 8. A nonaqueous liquid electrolyte according to Claim 7, wherein the average molecular weight of the macromolecular material is in the range of 1×10^3 to 1×10^8 .

10 9. A nonaqueous liquid electrolyte according to Claim 7, wherein a macromolecular material which, added in an amount of 0.01% or more but less than 10% by weight, brings the viscosity of the nonaqueous liquid electrolyte at 20°C within the range of 7 cP to 30,000 cP
15 is added to the nonaqueous solvent.

10. A nonaqueous liquid electrolyte secondary battery comprising:

a positive electrode containing an active material,
20 a negative electrode containing a material which absorbs and desorbs lithium ions, and

a liquid electrolyte sandwiched between the positive and negative electrodes, wherein the liquid electrolyte comprises:

25 a nonaqueous solvent containing γ -butyrolactone,

an electrolyte dissolved in the nonaqueous solvent,
and

a macromolecular material comprising the structure
represented by the formula:



wherein $n \geq 1$, which is added to the nonaqueous
solvent, the content of the macromolecular material
being 0.01% or more but less than 10% by weight.

10 11. A nonaqueous liquid electrolyte secondary battery
according to Claim 10, comprising:

a positive electrode containing an active material,
a negative electrode containing a material which
absorbs and desorbs lithium ions, and

15 a nonaqueous liquid electrolyte sandwiched between
the positive and negative electrodes, wherein a
macromolecular material which, added in an amount of
0.01% or more but less than 10% by weight, brings the
viscosity of the nonaqueous liquid electrolyte at 20°C
20 within the range of 7 cP to 30,000 cP is added to the
nonaqueous solvent.

12. A nonaqueous liquid electrolyte secondary battery
comprising:

25 a positive electrode containing an active material,

a negative electrode containing a material which
absorbs and desorbs lithium ions, and

a liquid electrolyte sandwiched between the
positive and negative electrodes,

5 wherein the nonaqueous liquid electrolyte
comprises; a nonaqueous solvent, an electrolyte
dissolved in the nonaqueous solvent and a macromolecular
material added to the nonaqueous solvent, and the
nonaqueous liquid electrolyte at 20°C is a fluid which
10 exhibits non-Newtonian properties.

13. A nonaqueous liquid electrolyte secondary battery
comprising:

15 a positive electrode containing an active material,
a negative electrode containing a material which
absorbs and desorbs lithium ions, and

a liquid electrolyte sandwiched between the
positive and negative electrodes, wherein the ratio of
ion conductivity σ (10^{-3} S/cm) to viscosity η (cP), p
20 (σ/η), in the nonaqueous liquid electrolyte at 20°C is
<0.1.

14. A nonaqueous liquid electrolyte secondary battery
according to Claim 13, including a nonaqueous
25 electrolyte comprising a macromolecular material added

to the nonaqueous liquid electrolyte.

15. A nonaqueous liquid electrolyte secondary battery
according to Claim 10, wherein a separator made of a
5 porous material having pores is disposed between the
positive and negative electrodes and the nonaqueous
liquid electrolyte is retained within the pores of the
separator to be sandwiched between the positive and
negative electrodes.

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